

Notice of Allowability

Application No.

10/806,255

Examiner

(Nancy) Thanh-Nhan P. Nguyen

Applicant(s)

TANAKA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/31/06.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


David Nelms
Supervisory Patent Examiner
Technology Center 2800

DETAILED ACTION

Allowable Subject Matter

Claims 1-16 are allowed.

Reasons for Allowance

Claims 1-16 are allowed since there is no prior art of record that teaches or suggests a transfective liquid crystal display device comprising a relationship of various elements as claimed with the specific allowable subject matter cited in the following claims:

Claims 1-11:

- the pixel includes a transmissive region corresponding to the transmissive pixel electrode section and a reflective region corresponding to the reflective pixel electrode section
- at least one of the pixel electrode substrate and the counter electrode substrate includes a protruding portion provided so that a thickness of the liquid crystal layer in the reflective region is smaller than that in the transmissive region
- one surface of the at least one of the pixel electrode substrate and the counter electrode substrate that is closer to the liquid crystal layer is subjected to a rubbing treatment in a predetermined direction
- the liquid crystal display device includes a light-blocking section is formed using the same material as one or more other elements of the liquid crystal display device

- wherein the light-blocking section includes one or more pieces, and the light-blocking section is asymmetric with respect to the protruding portion so that a downstream rubbing direction edge of the light-blocking section is located further from an adjacent edge of the protruding portion than is an upstream rubbing direction edge of the light-blocking section which may or may not extend beyond an adjacent different edge of the protruding portion

Claims 12-16:

- the pixel includes a transmissive region corresponding to the transmissive pixel electrode section and a reflective region corresponding to the reflective pixel electrode section
- at least one of the pixel electrode substrate and the counter electrode substrate includes a protruding portion provided so that a thickness of the liquid crystal layer in the reflective region is smaller than that in the transmissive region
- the liquid crystal display device includes a light-blocking section is formed using the same material as one or more other elements of the liquid crystal display device
- wherein an opening is provided in a color filter layer of the counter electrode substrate, the opening in the color filter layer being provided in the reflective region, and wherein the light-blocking section covers the entire opening in the color filter in the reflective region

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ozawa et al (US 2003/0076464) discloses a transfective liquid crystal display device comprising a protruding portion so that a thickness of the liquid crystal layer in at least part of the reflective region is smaller than that in the transmissive region; a light-blocking wherein the light-blocking section includes one or more pieces, and the light-blocking section is asymmetric with respect to the protruding portion. Ozawa et al lacks disclosure of one surface of the at least one of the pixel electrode substrate and the counter electrode substrate that is closer to the liquid crystal layer is subjected to a rubbing treatment in a predetermined direction, and the light-blocking section is asymmetric with respect to the protruding portion so that a downstream rubbing direction edge of the light-blocking section is located further from an adjacent edge of the protruding portion than is an upstream rubbing direction edge of the light-blocking section which may or may not extend beyond an adjacent different edge of the protruding portion.

Matsushita et al (US 6,885,418) discloses a transfective liquid crystal display device comprising an opening provided in a color filter corresponding in a reflective region. However Matsushita lacks disclosure of a light-blocking section covered the entire opening in the color filter in the reflective region.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

(Nancy) Thanh-Nhan P Nguyen
Examiner
Art Unit 2871

TN


David Nelms
Supervisory Patent Examiner
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